

# Preliminary Revision – Basic Arithmetic 1

- 1** Evaluate,  $(1\frac{1}{4})^2 + (\frac{1}{2})^3$  giving the exact value:

**A**  $1\frac{1}{2}$                       **B**  $1\frac{11}{16}$   
**C**  $\frac{25}{128}$                       **D**  $1\frac{5}{16}$

- 2** Find the value of  $\frac{6.85}{4.93 \times 6.35}$  correct to two decimal places:
- A** 0.22                      **B** 8.82  
**C** 5.32                      **D** 0.21

- 3** Find the value of  $\frac{1}{(8.275)^2} - \frac{1}{(9.465)^2}$  correct to three significant figures:
- A** 0.003                      **B** 0.003 42  
**C** 341                      **D** 0.003 44

- 4** Use a calculator to arrange the fractions  $\frac{3}{7}, \frac{9}{16}, \frac{11}{25}$  in ascending order.

**A**  $\frac{3}{7}, \frac{11}{25}, \frac{9}{16}$ ,                      **B**  $\frac{11}{25}, \frac{3}{7}, \frac{9}{16}$ ,  
**C**  $\frac{9}{16}, \frac{3}{7}, \frac{11}{25}$ ,                      **D**  $\frac{3}{7}, \frac{9}{16}, \frac{11}{25}$ ,

- 5** Evaluate  $6 \times 9 + 8 \times 7$ .

**A** 714                      **B** 434  
**C** 110                      **D** 390

- 6** The number 147.658 correct to two significant figures is:

**A** 15                      **B** 150  
**C** 147.65                      **D** 147.66

- 7** Write 248 000 in scientific notation:

**A**  $24.8 \times 10^4$                       **B**  $0.248 \times 10^5$   
**C**  $2.48 \times 10^5$                       **D**  $2.48 \times 10^{-5}$

- 8** Write  $6.96 \times 10^3$  as decimal numerals:

**A** 696                      **B** 69 600  
**C** 0.006 96                      **D** 6960

- 9** Work out the following, leaving the answer in standard form:  $(2 \times 10^5) \times (3 \times 10^6)$

**A**  $6 \times 10^1$                       **B**  $6 \times 10^{-11}$   
**C**  $6 \times 10^{11}$                       **D**  $1.5 \times 10^{-1}$

- 10**  $\frac{9.7}{\sqrt{2.3^2 + 6}}$  to one decimal place is:

**A** 0.3                      **B** 1.2  
**C** 2.9                      **D** 4.3

- 11** Express  $2^{-2} + 3^{-2}$  as a single fraction

**A**  $\frac{1}{13}$                       **B**  $\frac{2}{13}$   
**C**  $\frac{1}{36}$                       **D**  $\frac{13}{36}$

- 12** Find the value of  $\frac{(5.03)^2 \times \sqrt{2.13}}{51.4}$

correct to three decimal places.

**A** 0.718                      **B** 1.392  
**C** 1.023                      **D** None of these

- 13** Find the value of  $(3.89 \times 10^4) \div 5.8 \times 10^7$  correct to three significant figures.

**A** 671                      **B** 0.000 671  
**C** 0.671                      **D** 67.1

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(12 MARKS)

Express 436.789

**A** in scientific notation;**B** rounded off correct to the nearest whole number;**C** rounded off to the nearest one-hundredth.**D** Find the exact value of

(i)  $-5 - (-4)$

(ii)  $4.7601 \times 10^{25}$  divided by the product of  $3.87 \times 10^{12}$  and  $1.23 \times 10^{10}$

**E** Write 85 493 correct to the nearest thousand.**F** The length  $l$  of a pendulum with a period of oscillation  $T$  is given by:

$$l = 980 \left( \frac{T}{2\pi} \right)^2$$

Find  $l$  correct to one decimal place if  $T = 4$ .

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(12 MARKS)

Evaluate, leaving the answer in the simplest fraction form:

**A**  $\frac{1}{2} + \left(\frac{1}{2}\right)^2$

**B**  $3^{-1} + 2^{-1}$

**C**  $\left(2\frac{1}{2}\right)^2 - \left(\frac{1}{3}\right)^2$

Calculate each of the following correct to two decimal places:

**D**  $100^{\frac{1}{7}}$

**E**  $\frac{0.72 + 0.44}{1 - 0.72 \times 0.44}$

**F**  $\frac{\sqrt{87.6}}{(1.6)^2 + (1.3)^2}$

**G**  $1 - \frac{2}{(1.7)^2}$

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(12 MARKS)

**A** Find the value of  $\frac{(83.5)^2}{79.4 + 30.8}$ **14** The planet Jupiter is five hundred and eighty nine million kilometres from Earth. Express this distance in scientific notation.

**A** 589 000 000      **B**  $589 \times 10^6$

**C**  $5.89 \times 10^6$       **D**  $5.89 \times 10^8$

**15** The value of  $\frac{\sqrt{3.85}}{2.64 + 7.8}$  correct to two decimal places is:

**A** 0.19      **B** 0.61

**C** 5.32      **D** 8.54

**16** Simplify  $9^2 \div 9^{-2}$ 

**A** 1      **B**  $3^{-4}$

**C**  $3^4$       **D**  $3^8$

**17** Simplify  $4^5 \div 4^{-4}$ 

**A** 1      **B** 4

**C**  $2^9$       **D**  $2^{18}$

**18** The number 236.769 correct to two significant figures is:

**A** 24

**B** 240

**C** 236.76

**D** 236.77

**19** Simplify  $\frac{\sqrt{2.45}}{3.62 + 6.38}$  correct to two decimal places.

**A** 0.07

**B** 0.067

**C** 0.16

**D** 0.016

**20** The value of a property is \$2.2million.

It is the same as:

**A** \$220 000

**B** \$2 020 000

**C** \$2 200 000

**D** \$22 000 000